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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,753	05/26/2004	Douglas Zhu	81094665 / FMC 1698 PUS	3752
28395	7590	04/06/2006	EXAMINER	
BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			FASTOVSKY, LEONID M	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/709,753	Applicant(s) ZHU ET AL.	
	Examiner Leonid M. Fastovsky	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20050808</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on 12/12/05, PROSECUTION IS HEREBY REOPENED. The Office Action is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al (5,281,792).

Lee discloses a battery heating system for a vehicle when the vehicle is not running and shut down (col. 1, lines 29-40 and col. 3, lines 23-33), thus inherently determining the vehicle shut down condition, the system comprising a battery 5, an electric heater 8 to heat the battery 5, a thermistor 22 to determine the battery temperature, and a heater control circuit to heat the battery comprising a triac 40 and multivibrators 45 and 46 Col. 4, lines 3-35). Although he does not teach a method of heating, during the normal operation of the device the method steps recited in Claim 1 would be performed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2- 6, 10 and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee over Matava.

Lee discloses substantially the claimed invention, but does not disclose the shut down by controller, a suspense mode of operation and an ambient temperature.

Matava discloses a method of heating vehicle components including heating of a battery before starting an engine and the vehicle controller-microprocessor 7 (Col. 1, lines 5-35) inherently determining a shut-down condition through the select logic 8 (col. 6, lines 26-30) and heating while the vehicle is off (col. 6, lines 49-55). At first, before activating the controller 7 which is practically in a suspend-sleep mode condition, the system functions

are tested through keys 12 through 20 (col. 5, lines 21-56), the program begins the process of monitoring an ambient temperature, when the temperature is less than temperature threshold 22, the controller is inherently waking up, and a heating mode 31, e.g. active mode, is initiated when the ambient temperature is less than temperature threshold 22 (col. 6, lines 20-25, corresponding to claims 5 and 17). A stop heating command is transmitted to the vehicle select logic 8 by the microprocessor 7.

It would have been obvious to one having ordinary skill in the art to modify Lee's method of heating to include a suspend mode, an active mode and an ambient temperature monitoring as taught by Matava's method of heating in order to insure the adequate heating of the battery in the vehicle.

6. Claims 7-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Park (6,624,615).

Lee discloses substantially the claimed invention, but does not disclose a battery state of charge (SOC).

Park discloses a method managing temperature of a vehicle battery comprising a battery 12, a battery temperature detector 14, a temperature control apparatus 16, and a battery control unit 24. Further, Park discloses a battery state of charge (SOC) and determining the battery SOC with threshold-reference value applied to the fast-charging mode, but not limited to this mode (col. 3, lines 63-67, col. 4, lines 1-24 and col. 6, lines 1-67). It would have been obvious to one having ordinary skill in the art to modify Lee's invention to include a step of determining SOC of the battery and determining the

battery SOC with the threshold as taught by Park in order to insure the adequate heating of the battery in the vehicle.

7. Claims 9 and 19 -23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Matava and further in view of Park.

Lee in view of Matava discloses substantially the claimed invention, but does not disclose a battery state of charge (SOC).

Park discloses a method managing temperature of a vehicle battery comprising a battery 12, a battery temperature detector 14, a temperature control apparatus 16, and a battery control unit 24. Further, Park discloses a battery state of charge (SOC) and determining the battery SOC with threshold-reference value applied to the fast-charging mode, but not limited to this mode (col. 3, lines 63-67, col. 4, lines 1-24 and col. 6, lines 1-67). It would have been obvious to one having ordinary skill in the art to modify the invention of Lee in view of Matava to include a step of determining SOC of the battery and determining the battery SOC with the threshold as taught by Park in order to insure the adequate heating of the battery in the vehicle.

8. Claims 9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Matava.

Lee in view of Matava discloses substantially the claimed invention, but is silent about a step of preventing energy flow from the battery to the heater when the shut down is for prolong time. It would have been obvious to one having ordinary skill in the art to modify the invention of Lee in view of Matava using their microprocessor to include a step of preventing energy flow from the battery to the heater when vehicle not in use for a

prolonged period of time as an obvious design choice in order not to waste the battery energy while the vehicle is not in operation.

Response to Arguments

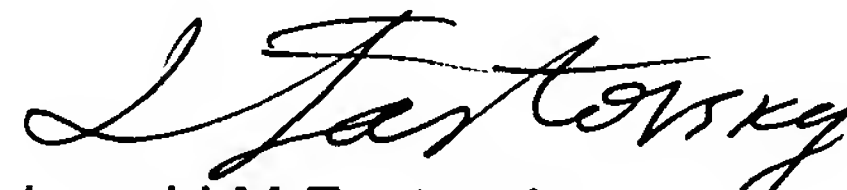
9. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

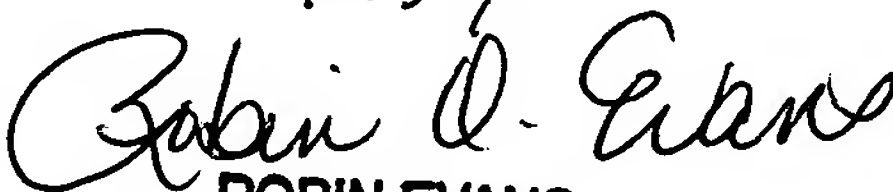
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid M Fastovsky whose telephone number is 571-272-4778. The examiner can normally be reached on M-Th. 8.00 am -6.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Imf


Leonid M Fastovsky
Examiner
Art Unit 3742

4/3/06

ROBIN EVANS
SUPERVISORY PATENT EXAMINER
4/3/06